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GLUE.

Peter Cooper, 17 Burling Slip, N. Y.

T. H. Hathaway & Co., 118 Maiden Lane, N. Y.

John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.

GRINDSTONES.

Chicago Scale Co., 151 South Jefferson Street, Chicago, Ill.; see page 2.

Montgomery & Co., Fulton street, N. Y.; see page 26.

Ohio Grindstone Co., Cleveland, Ohio.

GRUB HOES.

A. G. Peck & Co., Cohoes, N. Y., see page 7.

GUMS AND VARNISHES.

S. H. French & Co., York Ave., cor. 4th & Callowhill streets, Philadelphia, Pa.; see page 6.

John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.

L. A. Salomon & Bro., 216 Pearl street, N. Y.

GUN POWDER, MAKERS OF.

Lafin & Rand Powder Co., 29 Murray street, N. Y.

HALTERS, ROPE AND WEB.

The Union Hardware Manufacturing Co., West Troy, N. Y.; see page 28.

HAMMERS.

Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.

Hartford Hammer Co., Hartford, Conn.

Montgomery & Co., 105 Fulton street, N. Y.

HAMMERS, STEAM.

Bradley & Co., Syracuse, N. Y.

HEAD RESTS, PORTABLE, FOR R. R. CAR FLATS.
Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.

HAND FORCE PUMPS.
Union Manufacturing Co., 96 Chambers street, N. Y.

HAND STAMPS.
Chamberlain Manufacturing Co., 10 Cortlandt street, N. Y.
Erlison & Reed, 241 Broadway, N. Y.
Arthur Stafford, 105 Fulton street, N. Y.

HANDLE MAKERS.
V. G. Hundley, 79 Reade street, N. Y.
Chas. H. McCullough, 97 Chambers street, N. Y.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

HARDWARE, GENERAL.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.
Sargent & Co., 37 Chambers street, N. Y.

HARDWARE, COMMISSION MERCHANTS.
J. Seidel, Habana, Cuba; see page 21.

HARDWARE, FANCY.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
Reading Hardware Co., 81 Reade street, N. Y.
Turner & Seymour Manufacturing Co., 298 Broadway, N. Y.

HARDWARE, NOVELTIES FOR EXPORT.
E. Anderson & Sons, Williamsport, Pa.; see page 12.
Chicago Scale Co., 151 South Jufferson street, Chicago, Ill.; see page 2.
Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.

HARDWARE, PIANO-FORTE.
Montgomery & Co., 105 Fulton street, N. Y.

HARDWARE VARNISHES.
John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.

HARDWARE, CUTLERY IMPLEMENTS.
Joseph H. Adams & Son, 283 Pearl street, N. Y.
Boker, Hermann & Co., 104 Duane street, N. Y.
Quackenbush, Townsend & Co., 85 Chambers street, N. Y.

HARDWARE, SPECIALTIES.
E. Andrews & Sons, Williamsport, Pa.; see p. 12.
W. F. & John Barnes, Rockford, Ill.; see page 14.
Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.
G. M. Hotchkiss & Co., West Haven, Conn.
Kyser & Rex, Philadelphia, Pa.
Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
S. H. & E. Y. Moore, Chicago, Ill.
Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.
J. Seidel, Habana, Cuba; see page 21.
J. Stevens & Co., Chicopee Falls, Mass.; see page 13.
Spencer & Underhill, 94 Chambers street, N. Y.

HARNESS SNAPS.
Union Hardware Manufacturing Co., West Troy, N. Y.; see page 28.

HATCHETS.
A. G. Peck & Co., Cohoes, N. Y.; see page 7.

HATCHETS, SOLID STEEL.
A. G. Peck & Co., Cohoes, N. Y.; see page 7.

HAY KNIVES.

Hiram Holt, East Wilton, Maine.

HINGES, MAKERS OF

Stanley Works, New Britain, Conn.

Union Manufacturing Co., 96 Chambers street, N. Y.; see page 28.

HINGES, SPIRAL SPRING.

Lorenz Bommer, Brooklyn, N. Y.; see page 31.

HOES.

Geo. W. Bruce, 1 Platt street, N. Y.

Lane & Gale, Troy, N. Y.; see page 8.

Withington & Cooley Manufacturing Co., Jackson, Mich.

HOISTING MACHINES.

Clem & Morse, 411 Cherry street, Philadelphia, Pa.

N. B. Cushing, foot Morris street, Jersey City, N. J.; see page 30.

Wm. Sellers & Co., 79 Liberty street, N. Y.

HOISTS, PORTABLE.

Penfield Block Co., Lockport, N. Y.; see page 10.

J. Dunn, Cleveland, Ohio.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.

HOOKS, COTTON AND BALE.

New York Handle and Mallett Works, 456 East Houston street, N. Y.

HORSE NAILS, MANUFACTURERS OF

Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 1.

Essex Horse Nail Co., Troy, N. Y.

New Haven Horse Nail Co., 103 Chambers street, N. Y.

HORSE RASPS AND FILES.

Heller & Bro., Newark, N. J.

A. C. Leslie & Co., Montreal, Canada; see page 16.

HORSE SHOES, MAKERS OF

Chicago Steel Horse Shoe Co., Peck & Goddard, Agents, 60 Liberty street, N. Y.

Rhode Island Horse Shoe Co., Providence, R. I.

Schoenberger & Co., Pittsburgh, Pa.

HORSE TIES.

The Union Hardware Manufacturing Co., West Troy, N. Y.; see page 28.

HYDRANTS, ETC.

Fox & Drummond, 68 Maiden Lane, N. Y.; see page 9.

Eddy Valve Co., Waterford, N. Y.

John McLean, 300 Monroe street, N. Y.

HYDRAULIC JACKS.

Richard Dudgeon, 24 Columbia street, N. Y.

E. Lyon & Co., 470 Grand street, N. Y.

Watson & Stillman, 470 B. Grand street, N. Y.

HYDRAULIC MACHINERY.

Geo. C. Howard, 6 Cortlandt street, N. Y.

ICE CREAM FREEZERS.

White Mountain Freezer Co., Nashua, N. H.

ICE TOOLS AND SCALES.

Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.

Geo. W. Heartley, Toledo, Ohio.

INJECTORS.

Desmond Injector Co., Jackson Mich.

Flammang Injector Co., Cleveland, Ohio.

Hancock Inspiration Co., 111 Liberty street, N. Y.

INSULATED ELECTRIC WIRE.

L. G. Tillotson & Co., Dey street, N. Y.
Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.
Roebling & Sons & Co., 117 Liberty street, N. Y.; see page 23.

INSPIRATORS.

Fairbanks & Co., 311 Broadway, N. Y.

IRON, BUILDING.

S. B. Althouse & Co., 144 Greene street, N. Y.
Burnet & Co., 706 East 12th street, N. Y.
A. R. Whitney & Co., 58 Hudson street, N. Y.

IRON, MANUFACTURERS OF.

Eberhard Manufacturing Co., Cleveland, O.; see page 15.
Phoenix Iron Co., 95 Liberty street, N. Y.

IRON, STATUARY.

A. B. & W. T. Westervelt, 102 Chambers street, N. Y.; see page 29.

IRON, CHARCOAL.

L. Hernsheim, 20 Nassau street, N. Y.
Chas. G. Lundell, Boston, Mass.
John W. Quincy & Co., 98 William street, N. Y.

IRON FENCES.

Champion Iron Fence Co., Kenton, Ohio.
A. B. & W. T. Westervelt, 102 Chambers street, N. Y.; see page 29.

IRON, PIG, IMPORTERS OF

Cooper, Hewitt & Co., 17 Burling Slip, N. Y.; see page 18.
Fox & Drummond, 68 Wall street, N. Y.; see page 9.
A. C. Leslie & Co., Montreal, Canada; see page 16.

IRON ROOFING.

J. W. Fiske, 26 Park Place, N. Y.
T. C. Snyder, Canton, Ohio.
A. B. & W. T. Westervelt, 102 Chambers street, N. Y.; see page 29.

IRON, SHEET, MANUFACTURERS OF

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.
A. C. Leslie & Co., Montreal, Canada; see page 16.
Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.

IRON, STEEL AND NAILS.

Morris Wheeler & Co., 14 Cliff street, N. Y.

IRON SQUARES.

Lane & Gale, Troy, N. Y.; see page 8.

JACK SCREWS.

Bridgeport Brass Co., 19 Murray street, N. Y.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
Wallace & Sons, 89 Chambers street, N. Y.

LAMP POSTS.

Fox & Drummond, 68 Wall street, N. Y.; see page 9.

LAMPS AND OIL FEEDERS.

A. B. & W. T. Westervelt, 104 Chambers street, N. Y.; see page 29.
Bristol Brass and Clock Co., 32 Warren street, N. Y.
Hitchcock Lamp Co., 59 Murray street, N. Y.

LANTERNS.

Buckeye Lantern Co., Bellaire, Ohio.
Howard & Morse, 45 Fulton street, N. Y.; see page 4.
M. E. Pratt, 54 Cliff street, N. Y.

LATHS, PULLEY BLOCKS AND DRILLS.

Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.
 Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 W. F. & John Barnes, Rockford, Ill.; see page 14.

LEAD, BAR AND PIG.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.
 Colwell Lead Co., 63 Centre street, N. Y.
 O. E. Schmidt & Co., 22 Burling Slip, N. Y.

LEMON SQUEEZERS.

Ripley Manufacturing Co., Unionville, Conn.
 Wm. B. Dean, 43 Murray street, N. Y.; see page 12.

LOCKS AND KNOBS, MANUFACTURERS OF.

Durrie & McCarty, 97 Chambers street, N. Y.
 Taylor Manufacturing Co., New Britain, Conn.
 Yale & Towne, Stamford, Conn.

LETTER FILES.

Frasse & Co., 62 Chatham street, N. Y.

LIGHTNING RODS.

A, B. A W. T. Westervelt, 102 Chambers street, N. Y.; see page 29.
 Chas. H. Lilly, 19 Hudson street, N. Y.
 J. D. West & Co., 46 Cortlandt street, N. Y.

LIME.

C. Schofield, 138th street, north 3d avenue, N. Y.
 Osborn & Robinson, 87 Dey street, N. Y.
 S. H. French & Co., York ave., 4th & Callowhill sts., Philadelphia, Pa.; see p. 6.

LIQUID PAINTS.

John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.

LOCOMOTIVES.

Fox & Drummond, 68 Wall street, N. Y.; see page 9.

LUBRICATOR CUPS.

Detroit Lubricator Co., Detroit, Mich.

MACHINERY, NEW.

Dodge, Heller & Lyons, Newark, N. J.
 E. E. Garvin & Co., 130 Centre street, N. Y.
 Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 Robt. Wetherhill & Co., Chester, Pa.
 The Stiles & Parker Press Co., Middletown, Conn.
 W. F. & John Barnes, Rockford, Ill.; see page 14.

MACHINERY, SECOND-HAND.

Geo. B. Eddy, 398 Madison street, N. Y.
 Geo. L. Cummings, 140 Centre street, N. Y.
 John Carroll, 266 Water street, N. Y.

MACHINISTS' TOOLS AND SUPPLIES.

J. Stevens & Co., Chicopee Falls, Mass.; see page 13.
 Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
 Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 W. F. & John Barnes, Rockford, Ill.; see page 14.

MACHINE KNIVES.

Hiscox File Co., West Chelmsford, Mass.; see page 16.

MACHINE SCREWS.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.
 Union Nut Co., 99 Chambers street, N. Y.; see page 27.

MALLETS.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.
 Penfield Block Co., Lockport, N. Y.; see page 10.
 Union Nut Co., 99 Chambers street, N. Y.; see page 27.

MALLEABLE IRON CASTINGS.

Eberhart Manufacturing Co., Cleveland, O.; see page 15.

MAGIC LANTERNS.

John Gold, 19 East 14th street, N. Y.

John Scheidig & Co., 43 Maiden Lane, N. Y.

Thos. H. McAllister, 49 Nassau street, N. Y.

MATHEMATICAL INSTRUMENTS.

Benjamin Pike's Son & Co., 928 Broadway, N. Y.

Hugh W. Hunter, 1132 Broadway, N. Y.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

MATTOCKS.

A. G. Peck & Co., Cohoes, N. Y.; see page 7.

MEASURING RULES.

Kerby & Bro., 50 Fulton street, N. Y.; see page 29.

Stanley Rule and Level Co., 29 Chambers street, N. Y.

MEAT CHOPPERS.

Jacob Gebhardt, 142 Attorney street, N. Y.

Schopper & Kuhner, 171 Suffolk street, N. Y.

Union Nut Co., 99 Chambers street, N. Y.; see page 27.

METALS.

Fox & Drummond, 68 Wall street, N. Y.; see page 9.

Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.

Phosphor Bronze Smelting Co., 512 Arch st., Philadelphia, Pa.; see page 8.

METAL, HARD.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

METALLIC PAINT.

T. C. Snyder & Co., Canton, Ohio.; see page —.

MILLS, BONE-GRINDING.

Wilson Bros., Easton, Pa.

MILK CAN HANDLES.

Bruce & Cook, 188 and 190 Water street, N. Y.; see page 15.

MINE LAMPS.

Leonard Bros., Scranton, Pa.

MINERAL WOOL.

United States Mineral Wool Co., 16 Cortlandt street, N. Y.

MOLDING MACHINES.

Drummond Manufacturing Co., Louisville, Ky.

MOLDING SAND.

J. A. Emerick & Co., 1056 Beach street, Philadelphia Pa.

W. F. & John Barnes, Rockford, Ill.; see page 14.

Whitehead Bros., 515 and 517 West 15th street, N. Y.

MOUSE TRAPS.

Lovell Manufacturing Co., Erie, Pa.; see page 22.

Ripley Manufacturing Co., Unionville, Conn.

Union Nut Co., 99 Chambers street, N. Y.; see page 27.

NAILS.

Cumberland Nail and Iron Co., Philadelphia, Pa.

Fuller Bros. & Co., 139 Greenwich street, N. Y.

Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.

NAILS, ROOFING.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

NICKEL PLATERS' SUPPLIES.

Hanson Van Winkle & Co., 92 Liberty street, N. Y.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

Zucker & Levett Chemical Co., 540 West 16th street, N. Y.

NUTS AND BOLTS.

Fox & Drummond, 68 Wall street, N. Y.; see page 9.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.
 Union Nut Co., 99 Chambers street, N. Y.; see page 8.

OILS.

Barren Island Manufacturing Co., 36 Broadway, N. Y.
 John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.
 Metropolitan Oil Co., 102 Maiden Lane, N. Y.

OIL STOVES.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

OIL, ESSENTIAL.

Dodge & Olcott, 88 William street, N. Y.
 James Chaskel, 44 West Broadway, N. Y.
 Wm. Rudkin's Sons, 74 William street, N. Y.

OIL STONES.

Geo. Chase, East 107th street, Harlem River, N. Y.
 Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 Patrick H. Wren, 310 East 31st street, N. Y.

ORES.

Jackson Iron Co., Cleveland, Ohio.

PACKING.

Gutta Percha & Rubber Manufacturing Co., 23 Park Place, N. Y.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.
 New York Belting and Packing Co., 13 Park Row, N. Y.

PADLOCKS, PATENT HASP).

Stoddard Lock Co., 104 Reade street, N. Y.; see page 32.

PAINTS, PARIS GREEN.

Cleveland Iron Ore Paint Co., Cleveland, Ohio.
 S. H. French & Co., York Ave., cor. 4th and Callowhill streets, Philadelphia,
 Pa.; see page 6.
 Ingersoll Paint Works, Fulton street, N. Y.; see page

PAINTS, DRY, IN OIL AND PREPARED.

Ingersoll Paint Works, Fulton street, N. Y.; see page 30.
 H. W. Johns Manufacturing Co., 87 Maiden Lane, N. Y.
 John Lucas & Co., 89 Maiden Lane, N. Y. see page 25.

PAINT, ENAMEL

Ingersoll Paint Works, Fulton street, N. Y.; see page 30.

PAINT, MEATLLIC.

S. H. French & Co., York Ave., cor. 4th and Callowhill streets, Philadelphia,
 Pa.; see page 6.
 Ingersoll Paint Works, Fulton street, N. Y.; see page 30.

PANS, DRIPPING.

Bruce & Cook, 186, 188 and 190 Warren street, N. Y.; see page 15.

PATTERN LETTERS AND FIGURES.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

PASTE AND SIZE.

John S. Chase, 197 Chrystie street, N. Y.
 Samuel Weil, 196 Franklin street, N. Y.

PENS, STEEL.

Easterbrook Steel Pen Co., 26 John street, N. Y.
 Joseph Gillott & Sons, 91 John street, N. Y.
 G. W. Leman & Bro., 116 William street, N. Y.

PERFORATING MACHINES.

John Petrie, Jr., 110 Readestreet, N. Y.

PHOSPHOR BRONZE.

Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.
 Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.

PICKS, MANUFACTURERS OF

Thomas A. McBain, 540 West 46th street, N. Y.
 Pierson & Co., 24 Broadway, N. Y.

PIPES, IRON.

Fox & Drummond, 68 Wall street, N. Y.; see page 9.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.

PIPE CUTTERS.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
 Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 Pancoast & Maule, 243 3d street, Philadelphia, Pa.

PIPE, WATER AND GAS, MAKERS OF.

Fox & Drummond, 68 Wall street, N. Y.; see page 9.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.
 Reading Iron Works, Philadelphia, Pa.

PLANE IRONS, MANUFACTURERS OF.

Buck Bros., Millbury, Mass.

PLANES, MANUFACTURERS OF.

Wm. F. Hoffman, 82 Elizabeth street, N. Y.
 Josiah N. King, 373 Bowery, N. Y.
 Stanley Rule and Level Co., 29 Chambers street, N. Y.

PLATED WARE.

Elton Hall & Co., 47 East 13th street, N. Y.
 The Alford & Berklee Co., 77 Chambers street, N. Y.

PLASTER CAST FIGURES.

Nicholas Bernardini, 299 Broadway, N. Y.
 John Dewhurst, 160 West 49th street, N. Y.
 G. B. Sanford, 203 West 17th street, N. Y.

PLASTER PARIS, MANUFACTURERS OF

John Backus, 446 Cherry street, N. Y.
 S. H. French & Co., York Ave., 4th and Callowhill streets, Philadelphia, Pa.;
 see page 6.
 Wotherspoon Bros., 428 West 13th street, N. Y.

PLATE GLASS, IMPORTERS OF.

John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.

PLATINUM.

Hiram M. Raynor, 25 Bond street, N. Y.
 S. Whites Dental Manufacturing Co., 767 Broadway, N. Y.
 Richard S. Williams, 621 6th avenue, N. Y.

PLATE AND CARD PRINTING PRESSES.

Geo. C. Howard, 6 Cortlandt street, N. Y.

PLUMBERS MATERIALS, MANUFACTURERS OF

James M. Everhart, Scranton, Pa.
 Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
 McNab & Harlin Manufacturing Co., 56 John street, N. Y.

PLUMBERS HOOKS.

Berger Bros., 223 Arch street, Philadelphia, Pa.; see page 31.

PUMPING ENGINES, CALORIC.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.

PLUMBS AND LEVELS.

Union Nut Co., 99 Chambers street, N. Y.; see page 8.

POLISHING POWDER.

F. W. Gesswein, 39 John street, N. Y.
Leonard McCoy, 118 Liberty street, N. Y.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

POLISHING AND BUFFING MACHINERY.

E. Lyon & Co., 470 Grand street, N. Y.

PORTABLE FORGES.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

PORTLAND CEMENT.

S. H. French & Co., York Ave., cor. 4th and Callowhill streets, Philadelphia, Pa.; see page 6.
Howard Flemming, 23 Liberty street, N. Y.

POTTERS SUPPLIES.

Chester Mica and Porcelain Co., 87 Liberty street, N. Y.
Hammill & Gillespie, 240 Front street, N. Y.

POWER HAMMERS.

Dienelt & Eisenhardt, Philadelphia, Pa.

PUTTY.

S. H. French & Co., York Ave., cor. 4th and Callowhill streets, Philadelphia, Pa.; see page 6.
M. Feigel & Bro., 147 Mercer street, N. Y.
John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.

PULLEYS.

A. & F. Brown, 57 Lewis street, N. Y.
Medart Patent Pulley Co., St. Louis, Mo.
New York Flow Co., 55 Beekman street, N. Y.; see page 1.

PULLEY BLOCKS.

Benfield Block Co., Lockport, N. Y.; see page 10.

PUMPS, MAKERS OF.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
Silver & Deming Manufacturing Co., Salem, Ohio.
Union Manufacturing Co., 96 Chambers street, N. Y.

PULLEYS AND TACKLE.

Penfield Block Co., Lockport, N. Y.; see page 10.

PUNCH AND SHEARS.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
A. Welch, Lambertville, N. J.

RAILS, IRON AND STEEL.

Allentown Rolling Mills, Allentown, Pa.
Cambria Iron Co., Johnstown, Pa.
Fox & Drummond, 68 Wall street, N. Y.; see page 9.

RAILWAY SUPPLIES.

Chicago Scale Co., Chicago, Ill.; see page 2.
Fox & Drummond, 68 Wall street, N. Y.; see page 9.
Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.

RAILWAY SPIKES.

Fetler Drive Serew Co., 104 John street, N. Y.; see cover.

RAZORS AND STROP MANUFACTURERS OF.

Taylor Bros., Rochester, N. Y.; see page 30.
Tower & Lamont, Rochester, N. Y.; see page 5.
Geo. F. Saunders, 3 Astor House, N. Y.

REFRACTORY COMPOUNDS.

James Henderson, Bellfonte, Pa.

REFRIGERATORS.

Geo. N. Pierce & Co., Buffalo, N. Y.
 Whiston Refrigerator, 1168 Broadway, N. Y.
 Samuel A. Suydam, 550 Hudson street, N. Y.

REIN-HOLDERS.

T. C. Snyder & Co., Canton, Ohio.

RIVETS.

Bruce & Cook, 186-190 Water street, N. Y.; see page 15,
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 27.
 Union Nut Co., 99 Chambers street, N. Y.; see page 15.

ROCK BREAKERS.

Blake Crusher Co., New Haven, Conn.
 Farrel Foundry & Machine Co., Ansonia, Conn.
 Gates Iron Works, Chicago, Ill.

ROCK DRILLING MACHINES.

Rand Drill Co., 240 Broadway, N. Y.
 Ingersoll Rock Drill Co., 1 Park Place, N. R.
 T. C. Snyder & Co., Canton, Ohio.

ROLLING SHUTTERS, IRON AND STEEL.

Clark, Bunnett & Co., 162 West 27th street, N. Y.

ROLLER SKATES.

M. C. Hendley, Richmond, Ind.; see page 11.
 Union Hardware Manufacturing Co., West Troy, N. Y.; see page 28.
 Wm. A. Sutton, 524 West 20th street, N. Y.

ROMAN CEMENT.

S. H. French & Co., York ave., cor. 4th & Callowhill sts., Phil'a, Pa.; see p. 6.
 S. L. Merchant & Co., 41 Broadway, N. Y.

ROOFING, TIN PLATE AND SEAMERS.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

ROOFING.

Garry Iron Roofing Co., Cleveland, Ohio.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.
 T. New, 39 John street, N. Y.

ROOF CRESTING.

A. B. & W. T. Westervelt, 102 Chambers street, N. Y.; see page 29.
 H. W. John's Manufacturing Co., 87 Maiden Lane, N. Y.

ROPE AND CORDAGE.

D. Allen's Sons, 166 Front street, N. Y.
 L. Waterbury & Co., 139 Front street, N. Y.
 Wm. Wall's Sons, 113 Wall street, N. Y.

ROPE GOODS.

The Union Hardware Manufacturing Co., West Troy, N. Y.; see page 28.

RUSSIA IRON.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

ROTTON STONE.

Hammill & Gillespie, 240 Front street, N. Y.
 John Backus, 446 Cherry street, N. Y.

RUBBER BELTING.

Gu Percha and Rubber Manufacturing Co., 23 Park Place, N. Y.
 N. Y. Belting and Packing Co., 13 Park Row, N. Y.
 Robt. M. Gilmour, 82 John street, N. Y.

RULES, MANUFACTURERS OF.

Kerby & Bro., 50 Fulton street, N. Y.
 Stanley Rule and Level Co., 29 Chambers street, N. Y.
 Wm. H. Belcher, 89 Chambers street, N. Y.

SAD IRONS.

Enterprise Manufacturing Co., Philadelphia, Pa.

SAD IRON SANDS.

Berger Bros., 223 Arch street, Philadelphia, Pa.; see page 31.

SADDLERY HARDWARE.

Eberhard Manufacturing Co., Cleveland, Ohio; see page 15.

Jesse Lee & Son, 37 South 4th street, Philadelphia, Pa.; see page —.

Pratt & Letchworth, 97 Chambers street, N. Y.

SAFES.

Butler, Wm. H., 291 Broadway, N. Y.

Herring's Safe Co., 251 Broadway, N. Y.

Marvin Safe Co., 265 Broadway, N. Y.; see page 17.

SAND AND EMERY PAPER.

John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

S. H. French & Co., York ave., cor. 4th and Callowhill sts., Phil'a, Pa.; see p. 6.

SASH, BLINDS AND DOOR MAKERS.

Bradley & Currier, 54 Dey street, N. Y.

C. B. Keogh & Co., 203 Canal street, N. Y.

Wm. Hall & Sons, 512 East 20th street, N. Y.

SASH CHAINS AND WEIGHTS.

F. W. Jessup & Co., 67 Liberty street, N. Y.

R. B. Hugunin, Hartford, Conn.

SAWS, MAKERS OF.

E. Andrews & Sons, Williamsport, Pa.; see page 12.

Henry Disston & Son, Philadelphia, Pa.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

SAW SETS.

Asa Far, 64 College Place, N. Y.

Chas. Croissant & Bro., Albany, N. Y.; see page 28.

SASH FASTENERS.

H. A. Willes, Philadelphia, Pa.

Stoddard Lock Co., 104 Reade street, N. Y.; see page 32.

SCALES.

Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.

Fairbank's Scale Co., 311 Broadway, N. Y.

Richle Bros., Philadelphia, Pa.: see page —.

SCRAPERS, ROAD.

Champion Scraper Co., Troy, N. Y.

Kilbourne & Jacobs Manufacturing Co., Columbus, Ohio.

York Manufacturing Co., Portsmouth, Ohio.

SCREW-CUTTING MACHINERY.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.

Wiley & Russell Manufacturing Co., Greenfield, Mass.

SCREW DRIVERS.

Derby Bit Co., Ansonia, Conn.; see page 33.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

Sargent & Co., 37 Chambers street, N. Y.; see page 19.

SCOTCH HONES.

J. & H. Berge, 95 John street, N. Y.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

SCREEN WIRE CLOTH.

Bromwell Brush and Wire Goods Co., 181 Walnut st., Cincinnati, O.; see p. 16.

Phosphor Bronze Smelting Co., 512 Arch st., Philadelphia, Pa.; see page 8.

Howard & Morse, 45 Fulton street, N. Y.; see page 4.

Jno. A. Roebling Son's Co., 117 Liberty street, N. Y.; see page 23.

SCREW BOLTS, MAKERS OF.

Gaskill, Greenlie & Co., 491 Water street, N. Y.
 Sam'l Halls & Son, 231 West 10th street, N. Y.
 Union Nut Co., 99 Chambers street, N. Y.; see page 27.

SCREWS, MAKERS OF.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 Phosphor Bronze Smelting Co., 312 Arch st., Philadelphia, Pa.; see page 8.
 Union Nut Co., 99 Chambers street, N. Y.; see page 27.

SCREW PRESSES.

Geo. C. Howard, 6 Cortland street, N. Y.
 W. F. & John Barnes, Rockford, Ill.; see page 14.

SEAMLESS BRASS AND COPPER TUBES.

American Tool Works, 78 John street, N. Y.
 Bridgewater Iron Co., 73 Pearl street, N. Y.
 Montgomery & Co., 105 Fulton street, N. Y.; see page 36.

SEWING MACHINES.

Chicago Scale Co., 151 South Jefferson street, Chicago., Ill.; see page 2.
 New Home Sewing Machine Co., 3v Union Square, N. Y.; see page 14.

SCYTHE STONES.

A. F. Pike Manufacturing Co., Pike Station, N. H.; see page 16.

SHEARS AND SCISSORS.

American Shear Co., 298 Broadway, N. Y.
 Birmingham Iron Foundry, Birmingham, Conn.
 Henry Seymour Cutlery Co., 84 Chambers street, N. Y.

SHEARS (SQUARING) AND PUNCHES FOR IRON.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 1.
 Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
 Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

SHEET IRON, GALVANIZED.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

SHEET LEAD.

Colwell Lead Co., 63 Centre street, N. Y.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.

SHEET ZINC.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 31.

SHIP CHANDLERY.

DeGrauw, Aymar & Co , 34 South street, N. Y.
 Geo. H. Creed, 103 Reade street, N. Y.
 Penfield Block Co., Lockport, N. Y.; see page 10.

SHOVELS, SPADES AND SCOOPS.

A. Lee & Son, 1366 Broadway, N. Y.
 Payne, Pettlebone & Son, Wyoming, Pa.

SEIVES.

Bromwell Brush & Wire Goods Co., 181 Walnut st., Cincinnati, O ; see p. 16
 Howard & Morse, 57 Fulton street, N. Y.; see page 4.
 Phosphor Bronze Smelting Co., 512 Arch st., Philadelphia, Pa.; see p. 8.

SILVER-PLATED WARE

Holmes, Booth & Haydens, 49 Chambers street, N. Y.
 Manhattan Silver Plate Co., 301 East 2d street, N. Y.
 Reed & Baxton, 686 Broadway, N. Y.

SKATES (ICE), MANUFACTURERS OF.

P. Lowentraut, Newark, N. J.
 Wm. A. Sutton, 222 West 30th street, N. Y.
 Wm. M. Cornwall, 18 Warren street, N. Y.

SKIVER MANUFACTURERS.

Edward Dickerson, 70 Gold street, N. Y.
Wm. Dalton, 518 West 41st street, N. Y.

SOLDERING COPPERS.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.
Covert Manufacturing Co., West Troy, N. Y.

SOLDER.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.
Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 31.
Schœnberg Metal Manufacturing Co., 528 East 20th street, N. Y.

SPERM OIL MANUFACTURERS.

Thomas G. Hunt, 137 Front street, N. Y.

SPIKES.

A. Nelson, 295 Pearl street, N. Y.
Casper Maeller, 111 Mangin street, N. Y.
Fox & Drummond, 68 Wall street, N. Y.; see page 9.

SPORTING GOODS.

J. Stevens & Co., Chicopee Falls, Mass.; see page 13.
Kittridge, B. & Co., Cincinnati, Ohio.
Peck & Snyder, 132 Nassau street, N. Y.

SPRING MAKERS.

Carey & Moen, 234 West 29th street, N. Y.
National Car Spring Co., 13 Barclay street, N. Y.
Tuck Manufacturing Co., Brockton, Mass.

SPINNING RINGS.

Whitinsville Spinning Ring Co., Whitinsville, Mass.; see page 13.

STABLE FITTINGS.

Samuel Bent & Son, 72 Beekman street, N. Y.
Composite Iron Works, 53 Reade street, N. Y.
A. B. & W. T. Westervelt, 102 Chambers street, N. Y.; see page 29.

STAIR RODS.

M. Gould's Sons, 105 Duane street, N. Y.
Krickle, Gould & Co., 336 Broadway N. Y.
W. T. & J. Messereau, 321 Broadway, N. Y.

STEAM ENGINES.

Atlantic Steam Engine Works, 136 Water street, N. Y.
Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
Leonard & McCoy, 118 Liberty street, N. Y.

STEAMSHIP SUPPLIES.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

STEEL CASTINGS.

James Beggs & Co., 8 Dey street, N. Y.
Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.

STEEL IMPORTERS.

Frazer & Co., 62 Chatham street, N. Y.
A. C. Leslie, Montreal, Canada; see page 16.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

STEEL MANUFACTURERS.

Graphite Steel Co., 231 Broadway, N. Y.
Hogan & Son, 59 Beekman street, N. Y.
Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

STEEL. SHEET.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
U. S. Iron and Tin Plate Co., Demmler, Pa.

STEEL SQUARES.

Lane & Gale, Troy, N. Y.; see page 8.

STEEL TOOLS.

Brown & Co., Pittsburgh, Pa.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

Temple & Lockwood, 12 Platt street, N. Y.

STOCKS AND DIES.

Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

STOVE BOARDS, MANUFACTURERS OF.

Jno. S. Brooks, 299 Pearl street, N. Y.

Merchant & Co. 525 Arch street, Philadelphia, Pa.; see page 31.

STOVE BOARDS, CRYSTAL.

Bruce & Cook, 186, 188, and 190 Water street, N. Y.; see page 15.

STOVE LIFTERS.

Berger Bros., 223 Arch street, Philadelphia, Pa.; See page 31.

STOVE BOLTS, ETC.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

STOVE POLISH.

Dixon Crucible Co., 68 Reade street, N. Y.

E. R. Durkee & Co., 135 Water street, N. Y.

S. W. Sheldon, 93 Reade street, N. Y.

STOVE, GAS.

A. L. Bogart, 22 Union Square, N. Y.

Robert E. Deitz, 56 Fulton street, N. Y.

C. Riessner & Co., 406 Pearl street, N. Y.

STOVES AND RANGES.

L. F. Duparquet & Huot, 24 Wooster street, N. Y.; see page 3.

Michigan Stove Co., Detroit, Mich.

Charles R. Ruegger, 80 South 5th avenue, N. Y.; see page 29.

SUPPLIES FOR ROCKING MILLS.

Fox & Drummond, 68 Wall street, N. Y.; see page 9.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.

Montgomery & Co., 105 Fulton street, N. Y.; see page 26.

SWORD BLADES,

Hiscox File Co., West Chelmsford, Mass.; see page 16.

TACKS.

American Tack Co., Fair Haven, Mass.

Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.

Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.

TAILORS SQUARES.

Kerby & Bro., 50 Fulton street, N. Y.; see page 29.

TAPS AND DIES.

J. M. Carpenter, Pawtucket, R. I.

Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.

Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.

TELEGRAPH WIRE.

Jno. A. Roebling Son's Co., 117 Liberty street, N. Y.; see page 23.

TERNE PLATES.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

THERMOMETERS AND BAROMETERS.

Taylor Bros., Rochester, N. Y.; see page 15.

John Tagliabue, 66 Fulton street, N. Y.

L. C. Tower, Rochester, N. Y.; see page 5.

TOOLS, GARDEN.

American Tool Co., 116 Chambers street, N. Y.
Dunlap, C. W. & Co., 85 Chambers street, N. Y.
Nelson Tool Works, 623 First avenue, N. Y.

TOOLS, STEAM AND GAS FITTER.

Eaton, Cole & Burnham Co., 58 John street, N. Y.
Lancaster Manufacturing Co., 36 Dey street, N. Y.: see page 32.

TELEGRAPH AND TELEPHONE DRIVE SCREWS.

Fetter Drive Screw Co., 104 John street, N. Y.; see cover.

TIN, BAR AND PIG.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

TIN FOIL.

Budde & Westerman, 50 Vesey street, N. Y.
Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.
Wittemann Bros., 45 Murray street, N. Y.

TINNERS' MACHINES AND TOOLS.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

TIN PLATE.

A. C. Leslie & Co., Montreal, Canada; see page 16.
Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 31.
Phelps, Dodge & Co., 11 Cliff street, N. Y.

TIN, PERFORATED.

Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

TIN WARE.

Berger Bros., 223 Arch street, Philadelphia, Pa.; see page 31.
Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.
Charles R. Ruegger, 80 South 5th avenue, N. Y.; see page 29.

TINNERS' HARDWARE.

Berger Bros., 223 Arch street, Philadelphia, Pa.; see page 31.

TIN WARE HANDLES.

Berger Bros., 223 Arch street, Philadelphia, Pa.; see page 31.

TOILET WARE HANDLES.

Berger Bros., 223 Arch street, Philadelphia, Pa.; see page 31.

TRUCKS, STORE AND RAILWAY.

Jno. S. Kipp, 163 Eldridge street, N. Y.
Penfield Lock Co., Rochester, N. Y.; see page 10.
Reichle Bros., Philadelphia, Pa.

TABLE SCRAPERS.

Chalmers Spence Co., 23 John street, N. Y.
Ruffner & Dunn, Philadelphia, Pa.

TWISTER RINGS.

Whitinsville Spinning Ring Co., Whitinsville, Mass.; see page 13.

TOY SQUARES AND TOY BLOCKS.

Union Nut Co., 99 Chambers street, N. Y.; see page 27.

TWISTERS.

Cable Flax Mills, 113 Worth street, N. Y.
The A. H. Hart & Co., 90 White street, N. Y.
Travers Bros., 107 Duane street, N. Y.

VALVES, GAS, WATER AND STEAM.

Ludlow Valve Manufacturing Co., Troy, N. Y.
McNabb & Harlin Manufacturing Co., 56 John street, N. Y.
The Eddy Valve Co., Waterford, N. Y.

VARNISHES AND JAPANS.

- Berry Bros., 96 John street, N. Y.
 S. H. French & Co., York ave., 4th and Callowhill streets, Philadelphia, Pa.;
 see page 6.
 John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.
 C. B. Keogh & Co., 203 Canal street, N. Y.

VISES.

- Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.
 Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 Union Nut Co., 99 Chambers street, N. Y.; see page 27.

WAGON JACKS.

- Union Nut Co., 99 Chambers street, N. Y.; see page 27.

WASHING MACHINES.

- Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.
 Seaman & Co., Millport, N. J.
 The American Laundry Machinery Co., 8 New Church street, N. Y.

WAGON HARLWARE.

- Eberhard Manufacturing Co., Cleveland, Ohio; see page 15.

WEATHER VANES.

- J. W. Fiske, 26 Park Place, N. Y.
 T. W. Jones, 213 Pearl and 170 Front streets, N. Y.; see page 6.
 A. B. & W. T. Westervelt, 102 Chambers street, N. Y.; see page 29.

WHETSTONES.

- Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 A. F. Pike & Co., Pike Station, N. H.

WHITE LEAD.

- Robt. Colgate & Co., 287 Pearl street, N. Y.
 S. H. French & Co., York avenue, cor. 4th and Callowhill streets, Philadelphia, Pa.; see page 6.

WHITING.

- S. H. French & Co., York avenue, cor. 4th and Callowhill streets, Philadelphia, Pa.; see page 6.
 John Lucas & Co., 89 Malden Lane, N. Y.; see page 25.
 Truss, Law & Co., 219 Pearl street, N. Y.

WINDOW CLEANERS.

- Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.
 Perfection Window Cleaner Co., Chicago, Ill.

WINDOW GLASS.

- Holbrook Bros., 87 Beekman street, N. Y.
 John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.
 Semon, Bache & Co., 134 Duane street, N. Y.

WINDOW SCREENS, WIRE.

- Bromwell Brush & Wire Goods Co., 181 Walnut street, Cincinnati, O.; see p. 16.
 Howard & Morse, 45 Fulton street, N. Y.; see page 4.

WINDOW SPRINGS.

- W. S. Hammond, Lewisberry, Pa.; see page 31.

WIRE CLOTHES LINES.

- Jno. A. Roebling Son's Co., 117 Liberty street, N. Y.; see page 23.

WIRE CLOTH.

- Bromwell Brush & Wire Goods Co., 181 Walnut street, Cincinnati, O.; see p. 16.
 Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.
 Howard & Morse, 45 Fulton street, N. Y.; see page 4.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 31.
 Jno. A. Roebling Son's Co., 117 Liberty street, N. Y.; see page 23.

WIRE AND WIRE ROPE, MANUFACTURERS OF.

- A. C. Leslie & Co., Montreal, Canada; see page 16.
 Montgomery & Co., 105 Fulton street, N. Y.; see page 26.
 Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.
 Jno. A. Roebling Son's Co., 117 Liberty street, N. Y.; see page 23.

WIRE MANUFACTURERS.

- American Wire Co., Cleveland, Ohio; see page 14.
 A. C. Leslie & Co., Montreal, Canada; see page 16.
 Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.
 Jno. A. Roebling Son's Co., 117 Liberty street, N. Y.; see page 23.

WIRE GOODS, MANUFACTURERS OF.

- Bromwell Brush & Wire Goods Co., 181 Walnut street, Cincinnati, O.; see p. 16.
 Howard & Morse, 45 Fulton street, N. Y.; see page 4.
 Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.

WIRE, COPPERED AND TINNED.

- Bruce & Cook, 186, 188 and 190 Water street, N. Y.; see page 15.

WIRE RAILING.

- A. Battaille, 122 West Broadway, N. Y.; see page 21.
 Howard & Morse, 45 Fulton street, N. Y.; see page 4.

WIRE FENCES.

- Howard & Morse, 45 Fulton street, N. Y.; see page 4.

WIRE RODS.

- A. C. Leslie & Co., Montreal, Canada; see page 16.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.
 Montgomery & Co., 105 Fulton street, N. Y.; see p. 26.

WIRE ROPE, IRON AND STEEL, MAKERS OF.

- A. C. Leslie & Co., Montreal, Canada; see page 16.
 Phosphor Bronze Smelting Co., 512 Arch street, Philadelphia, Pa.; see page 8.
 Jno. A. Roebling Son's Co., 117 Liberty street, N. Y.; see page 23.

WIRE STRETCHERS.

- Jno. A. Roebling Son's Co., 117 Liberty street, N. Y.; see page 23.
 Samson Novelty Works, DeKalb, Illinois.

WOOD-WORKING MACHINERY, FOOT POWER.

- W. F. & John Barnes, Rockford, Ill.; see page 14.

WRENCHES, MAKERS OF.

- A. G. Coes & Co., Worcester Mass.
 Bemis & Call, Springfield, Mass.
 Lancaster Manufacturing Co., 36 Dey street, N. Y.; see page 32.

WRINGERS.

- Chicago Scale Co., 151 South Jefferson street, Chicago, Ill.; see page 2.
 Lovell Manufacturing Co., Erie, Pa.; see page 22.
 Union Nut Co. 99 Chambers street, N. Y.; see page 27.

ZINC.

- John Lucas & Co., 89 Maiden Lane, N. Y.; see page 25.
 Mathieson & Hegeler Zinc Co., Lasalle, Ill.
 Merchant & Co., 525 Arch street, Philadelphia, Pa.; see page 15.

ZINC STATUARY.

- J. W. Fiske, 26 Park Place, N. Y.
 J. L. Mott Iron Works, 88 Beekman street, N. Y.
 A. B. & W. T. Westervelt, 102 Chambers street, N. Y.; see page 29.

ZINC STOVE BOARDS.

- Bruce & Cook, 186, 188 and 199 Water street, N. Y.; see page 15.

 THOSE who are building, or making alterations in their buildings, should not fail to notice the card of T. W. Jones, offering superior weather vanes. His catalogue is most complete, and men of taste do not need to be told that a few dollars spent in these useful ornaments often add ten times their cost to the market value of a building.

THE NAIL MILLS OF THE UNITED STATES.

THE *Bulletin* of the American Iron and Steel Association prints the following directory of the nail mills of the United States, compiled by Mr. James M. Swank. The information was gathered direct from the nail makers and is probably complete and accurate. The capacity of each works is given in kegs of 100 pounds :

MAINE.

Pembroke Iron Works, James C. Warr, Pembroke. Number of nail machines, 30. Annual capacity, 30,000 kegs of iron and patent iron-steel nails.

MASSACHUSETTS.

East Bridgewater Iron Company, Rogers & Sheldon, East Bridgewater. Office, 81 Water street, Boston. Number of nail machines, 26. Annual capacity, 32,000 kegs of cut nails.

Fall River Iron Works, Fall River Iron Works Company, Fall River. Number of nail machines, 105. Annual capacity, 160,000 kegs of cut nails. Adding 10 more nail machines.

Gosnold Mills, New Bedford. Propose adding 10 nail machines to their rolling mill, to have an annual capacity of 4,500 kegs of cut nails.

Mount Hope Iron Works, Somerset. Number of nail machines, 58. Annual capacity, 72,000 kegs of cut nails.

Parker Mills, Bridgewater Iron Company, Wareham. Office at Bridgewater. Number of nail machines, 69. Annual capacity, 120,000 kegs of cut nails.

Robinson Iron Company, Plymouth. Number of nail machines, 18. Annual capacity, 25,000 kegs of cut nails.

Somerset Iron Works, Old Colony Iron Company, Somerset. Office at Taunton. Number of nail machines, 70. Annual capacity, 125,000 kegs of cut nails.

Tisdale Nail Works, William E. Coffin & Co., East Wareham. Office, 8 Oliver street, Boston. Number of nail machines, 80. Annual capacity, 70,000 kegs of cut nails. Has been idle for many years.

Tremont Nail Company, Tremont Nail Works, West Wareham. Number of Nail machines, 75. Annual capacity, 100,000 kegs of patent iron-steel nails.

Wareham Nail Company, South Wareham. Number of nail machines, 33. Annual capacity, 65,000 kegs of cut nails.

Weymouth Iron Company, East Weymouth. Number of nail machines, 82. Annual capacity, 106,000 kegs of cut nails.

NEW YORK.

Albany and Renselaer Iron and Steel Company, Troy. Number of nail machines, 45. Annual capacity, 40,000 kegs of steel nails.

Sable Iron Works, J. & J. Rogers Iron Company, Ausable Forks. Number of nail machines, 10. Nail department idle. Will probably never make nails again for the market.

NEW JERSEY.

Boonton Iron Works, Boonton. Number of nail machines, 150. Idle since 1876.

Cumberland Nail and Iron Company, Bridgeton. Number of nail machines, 84. Annual capacity, 140,000 kegs of cut nails.

Oxford Iron and Nail Company, Oxford. Number of nail machines, 103. Annual capacity, 250,000 kegs of cut nails.

PENNSYLVANIA.

American Iron Works, Jones & Laughlins, Pittsburgh. Number of nail machines, 63. Annual capacity, 150,000 kegs of cut nails and spikes.

Anchor Nail and Tack Works, Chess, Cook & Co., Pittsburgh. Number of nail machines, 96. Annual capacity, 250,000 kegs of cut nails and spikes.

Atlantic Iron and Nail Works, P. L. Kimberly & Co., Sharon. Number of nail machines, 40. Annual capacity, 75,000 kegs of cut nails.

Bellefonte Rolling Mills and Nail Factory, Bellefonte Nail Company, Limited, Bellefonte. Number of nail machines, 30. Annual capacity, 65,000 kegs of cut nails.

Birdsboro Nail Works, E. & G. Brooke Iron Company, Birdsboro. Number of nail machines, 109. Annual capacity, 240,000 kegs of cut nails.

Cambria Iron Company, Johnstown. Preparing to engage in the manufacture of steel nails.

Chesapeake Nail Works, Chas. L. Bailey & Co., Harrisburg. Number of nail machines, 103. Annual capacity, 275,000 kegs of cut nails.

Clinton Rolling Mill, Graff, Bennett & Co., Pittsburgh. Number of nail machines, 41. Not running nail machines.

Danville Nail Works, Danville Nail and Manufacturing Company, Danville, Montour County. Built in 1882-83, and first put in operation August 31, 1883. Number of nail machines, 15. Annual capacity, 60,000 kegs of cut nails and spikes.

Duncannon Iron Company, Duncannon. Office, 122 Race street, Philadelphia. Number of nail machines, 64. Annual capacity, 140,000 kegs of cut nails.

Etna Iron Works, Limited, Newcastle, Lawrence County. Number of nail machines, 55. Annual capacity, 120,000 kegs of cut nails.

Harrisburg Nail Works, McCormick Estate, Harrisburg. Works at Fairview, Cumberland County. Number of nail machines, 78. Annual capacity, 175,000 kegs of cut nails.

Hollidaysburg Iron Works, Hollidaysburg Iron and Nail Company, Hollidaysburg. Number of nail machines, 22. Annual capacity, 60,000 kegs of cut nails and spikes.

Juniata Iron and Steel Works, Shoenerger & Co., Pittsburgh. Number of nail machines, 92. Annual capacity, 225,000 kegs of cut nails.

Juniata Rolling Mill, McLanahan, Smith & Co., Limited, Hollidaysburg. Number of nail machins, 30. Annual capacity, 60,000 kegs of cut nails.

Kensington Iron and Steel Works, James Rowland & Co. 920 North Delaware avenue, Philadelphia. Number of nail machines, 38. Annual capacity, 60,000 kegs of cut nails

Milton Nail Works, C. A. Godcharles & Co., Milton. Number of nail machines, 75. Annual capacity, 130,000 kegs of cut nails.

Northumberland Iron and Nail Works, Van Alen & Co., Northumberland. Number of nail machines, 30. Annual capacity, 70,000 kegs of cut nails.

Portage Iron Company, Limited, Duncansville. Number of nail machines, 37. Annual capacity, 60,000 kegs of cut nails.

Pottstown Iron Company, Pottstown. Number of nail machines, 79. Annual capacity, 300,000 kegs of cut nails. Adding 20 more nail machines.

Reuben Johnson & Co., Northumberland. Building a nail works to contain about 36 nail machines to have annual capacity of 75,000 kegs of cut nails. Will go into operation about December 1.

Sable Iron and Nail Works, Zug & Co., Pittsburgh. Number of nail machines, 60. Annual capacity, 120,000 kegs of iron and iron-steel nails.

Sharon Iron Company, Sharon. Number of nail machines, 46. Annual capacity, 90,000 kegs of cut nails. Intend to add 18 more nail machines.

Shenango Iron Works, Newcastle. Number of nail machines, 55. Annual capacity, 150,000 kegs of cut nails.

Standard Nail and Iron Company, Williamsport. Works at Crescent. Number of nail machines, 17. Annual capacity, 30,000 kegs of cut nails.

Sunbury Nail Works, Sunbury Nail, Bar and Guide Iron Manufacturing Company, Sunbury. Built in 1883, and first put in operation August 20, 1883. Number of nail machines, 25. Annual capacity, 60,000 kegs of cut nails.

Towanda Nail Works, R. A. Bostley & Co., Towanda. Number of nail machines, 26. Annual capacity, 60,000 kegs of cut nails.

Vesuvius Iron and Nail Works, Moorhead Bros. & Co., Pittsburgh. Number of nail machines, 49. Annual capacity, 94,000 kegs of cut nails.

Williamsport Rolling Mill and Iron Works, Milton Iron Company, Williamsport. Nail plant added in 1882-3. Number of nail machines, 50. Annual capacity, 95,000 kegs of cut nails.

VIRGINIA.

Graham & Robinson, Graham's Forge. Number of nail machines, 5. Have been idle for many years, and will probably never make nails again.

James River Iron Works, four miles above Lynchburg. Works purchased by A. H. Leftwich, who will convert them into a nail works.

Old Dominion Iron and Nail Works, Richmond. Works on Belle Isle. Number of nail machines, 100. Annual capacity, 300,000 kegs of cut nails.

WEST VIRGINIA.

Belmont Nail Company, Wheeling. Number of nail machines, 131. Annual capacity, 350,000 kegs of cut nails. Will make steel nails next spring.

Benwood Iron Works, Benwood, Marshall County. Office at Wheeling. Number of nail machines, 124. Annual capacity, 308,000 kegs of cut nails. Erecting Bessemer steel works, to consist of two 4-ton converters, to produce steel for the manufacture of steel nails. Expect to add 16 more nail machines before the close of the year.

La Belle Iron Works, Wheeling. Number of nail machines, 122. Annual capacity, 275,000 kegs of cut nails and spikes.

Riverside Iron Works, Wheeling. Number of nail machines, 126. Annual capacity, 325,000 kegs of cut nails. Will add 18 more nail machines this year. Erecting Bessemer steel works, to consist of two 4-ton converters, to produce steel for nails.

Standard Nail Works, Standard Nail and Iron Company, Clifton. Number of nail machines, 76. Annual capacity, 150,000 kegs of cut nails and spikes. Will add 49 more nail machines this year.

Top Mill, Wheeling Iron and Nail Company, Wheeling. Number of nail machines, —. Annual capacity, 260,000 kegs of cut nails.

ALABAMA.

Brierfield Coal and Iron Company, Brierfield. First nails made in September, 1883. Number of nail machines, 60. Annual capacity, 100,000 kegs of cut nails. Intend to add 40 more nail machines.

KENTUCKY.

Norton Iron Works, Ashland. Number of nail machines, 94. Annual capacity, 275,000 kegs of cut nails.

TENNESSEE.

Knoxville Iron Company, Knoxville. Number of nail machines, 41. Annual capacity, 75,000 kegs of cut nails.

South Tredegar Iron Company, Chattanooga. Number of nail machines, 41. Annual capacity, 190,000 kegs of cut nails.

OHIO.

Belfont Iron Works, Belfont Iron Works Company, Ironton. Number of nail machines, 125. Annual capacity, 300,000 kegs of cut nails.

Beilaire Nail Works, Bellaire. Number of nail machines, 124. Annual capacity, 338,000 kegs of cut nails and spikes. Erecting Bessemer steel works, to contain two 4-ton converters, to produce steel for the manufacture of steel nails.

Falcon Iron and Nail Works, Falcon Iron and Nail Company, Niles. Number of nail machines, 44. Annual capacity, 100,000 kegs of cut nails.

Jefferson Iron Works, Steubenville. Number of nail machines, 115. Annual capacity, 340,000 kegs of cut nails. Intend adding 20 more nail machines.

Junction Iron Company, Mingo Junction. Office, Wheeling, W. Va. Nail mill built in 1882, and put in operation November 30, 1882. Number of nail machines, 126. Annual capacity, 300,000 kegs of cut nails and spikes.

Kelly Nail and Iron Company, Ironton. Built in 1883, and first put in operation in November, 1883. Number of nail machines, 100. Annual capacity, 200,000 kegs of cut nails and spikes.

Laughlin Nail Company, Martin's Ferry. Office, Wheeling, W. Va. Number of nail machines, 114. Annual capacity 312,000 kegs of cut nails and spikes.

Mahoning Iron Works, Brown, Bonnell & Co., Youngstown. Number of nail machines, 50. Annual capacity, 130,000 kegs of cut nails.

Spaulding Iron Company, Brilliant. Built in 1882-3, and will be put in operation during the present month. Number of nail machines, 60. Annual capacity, 180,000 kegs. Prepared to make both iron and steel nails.

INDIANA.

Aurora Iron Mills, Cobb's Iron and Nail Company, Aurora. Number of nail machines, 37. Annual capacity, 104,000 kegs of steel and combined iron and steel nails. Intend to add more nail machines soon.

Greencastle Iron and Nail Company, Greencastle. Number of nail machines, 45. Annual capacity, 100,000 kegs of cut nails and spikes.

Terre Haute Iron and Nail Works, Terre Haute. Number of nail machines, 126. Annual capacity, 325,000 kegs of cut nails.

ILLINOIS.

Belleville Nail Company, Belleville. Number of nail machines, 72. Annual capacity, 150,000 kegs of cut nails.

Calumet Iron and Steel Company, Cummings. Office, 57 Dearborn street, Chicago. Number of nail machines, 115. Annual capacity, 300,000 kegs of iron and steel nails.

Centralia Iron and Nail Works, Centralia. Number of nail machines, 36. Annual capacity, 90,000 kegs of cut nails.

Western Nail Company, Belleville. Nail mill built in 1882, and first put in operation September 4, 1882. Destroyed by fire April 25, 1883, and rebuilt and put in operation June 25, 1883. Number of nail machines, 72. Annual capacity, 180,000 kegs of cut nails. Will add 54 more nail machines before the close of this year.

WISCONSIN.

North Chicago Rolling Mill Company, Bay View. Office, Milwaukee. Have commenced the erection of a nail mill to contain 100 nail machines, to be completed by January 1, 1884. They will have an annual capacity of 350,000 kegs of iron and steel nails.

NEBRASKA.

Omaha Nail Works, John D. Creighton, Omaha. Number of nail machines, 26. Annual capacity, 60,000 kegs of cut nails.

COLORADO.

Colorado Coal and Iron Company, South Pueblo. Number of nail machines, 27. Annual capacity, 120,000 kegs of cut nails.

CALIFORNIA.

Pacific Iron and Nail Company, Oakland. Built in 1882-83. Number of nail machines, 70. Annual capacity, 150,000 kegs of cut nails.

The Iron Age says editorially: "The fact that the water in the various streams of the New England States has been exceptionally low during this season again directs attention to the necessity of gradually substituting steam for water-power. A number of causes have conspired to diminish the supply, and it is now reported as rapidly failing in many places. On the whole, however, it is probable that with the present state of the market the drought will not be without beneficial effects, preventing an excessive accumulation of stock, and thus holding out brighter prospects for the future. At the same time the conditions may not always prove so favorable, and cases will unquestionably arise when the curtailment of production such as is now rendered necessary will be attended with serious inconvenience. It is evident that in these days of high-pressure business enterprises there are very few important lines of manufacturing which can afford to depend upon water-power, especially as its economy over steam, under the most favorable conditions, is so small as to warrant a doubt whether it is not largely imaginary."

COMPARED with last year the imports of iron and lead show a heavy decline, while steel is coming over in much larger quantities. Tin imports are about the same in quantity, except as to slabs, which are increased about 20 per cent. Imports of cutlery and hardware are almost nominal.

ALTHOUGH inactivity has existed in the general hardware trade during the past month, many experienced hardware men regard the future outlook as very encouraging.

PIRACY of trade-marks has repeatedly attracted attention both here and abroad, but, notwithstanding the heavy penalties imposed in a few cases, the practice has not yet been entirely suppressed. Thus, United States Consul Van Riper, at Moscow, Russia, in a recent report remarks that, in trying to introduce American tools at different Russian establishments, he invariably encountered "American articles" of foreign manufacture, principally from

Germany, bearing American trade-marks. Although the genuine American implements were of superior workmanship, it was found an extremely difficult matter to effect sales, the very much inferior imitations being offered at greatly lower prices. As a Russian will always buy that which is cheapest, regardless of quality, it is evident that American goods in that market labor under a serious disadvantage. We hope, however, no effort will be made to extend our Russian trade by lowering the quality standard. Cut-throat trade of this kind soon becomes ruinously unprofitable, and the less our manufacturers have of it the better for them. It would be much better to take steps to secure the adequate protection of their trade-marks abroad, and to build up such a trade as high-quality standards will command.—*Iron Age*.

RESPONSIBILITY OF RAILROADS FOR BREAKING STOVES IN TRANSIT. — In the case of Lee vs. St. Paul, Minneapolis and Manitoba Railway Company, decided recently by the Supreme Court of Minnesota, it appeared that the plaintiff shipped at Chicago, by the Chicago and Northwestern Railroad, a carload of stoves consigned to himself at Moorhead, Minn. The stoves were carried over the Chicago and Northwestern and Omaha railroads to St. Paul, and thence to their destination over the defendant's line. The defendant, instead of transferring them to its own cars at St. Paul, allowed them to be carried over its own road in the car in which they had been carried from Chicago, and billed them through in that car from St. Paul to Moorhead without opening it or inspecting the contents. When the car was opened, upon reaching its destination, the stoves were found to be badly broken. Plaintiff sued the defendant for damages and recovered judgment. This judgment and an order denying a new trial were affirmed by the Supreme Court, which in the course of its opinion, said: "Where goods have been transported by several successive carriers, and it appears that they were in good condition when delivered to the first carrier, the jury may presume, in the absence of evidence to the contrary, that the goods reached the hands of the last carrier in the same condition as when delivered to the first carrier on the line. This rule is founded upon important considerations of public policy. This rule is not modified or changed by the fact that the last carrier, instead of transferring the goods, transported them over its line in the foreign car in which it received them. As a matter of convenience to the carriers themselves, this is usually done where the freight is received in carloads for a common destination. To indulge in a different presumption in such cases would, as business is now conducted, practically abrogate the rule referred to. We can see no distinction in this respect between goods transported by the carload in a locked car and goods transported in a package nailed or otherwise fastened up. If there can be any difference, it would be in favor of applying the rule more strictly in the former case than in the latter, for we see no reason why the carrier would not have the right to open the car for the purpose of inspecting the contents—a right which they might not have in the case of closed packages. Of course, we are not now speaking of cars in transit from a foreign country in bond and under the seal of the United States Custom House authorities."

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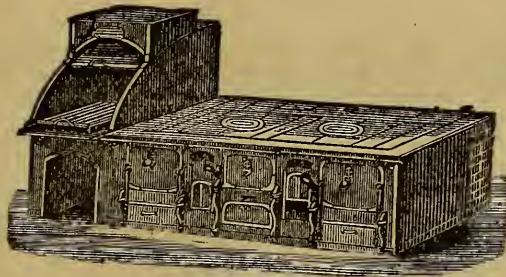
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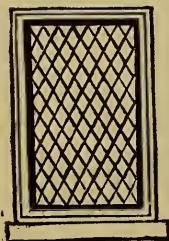
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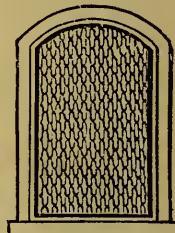
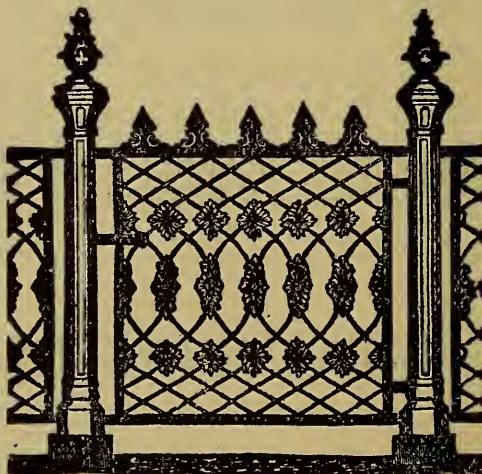
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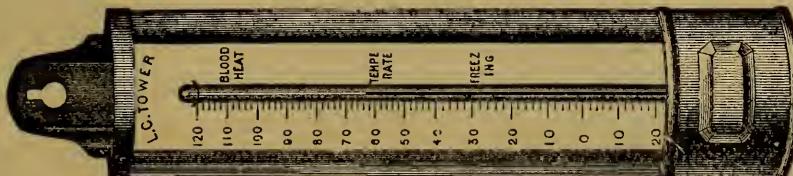
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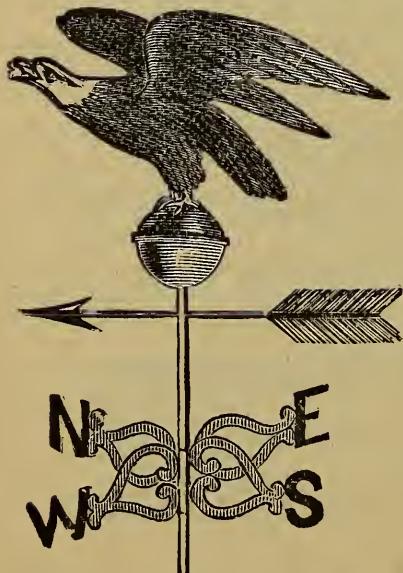
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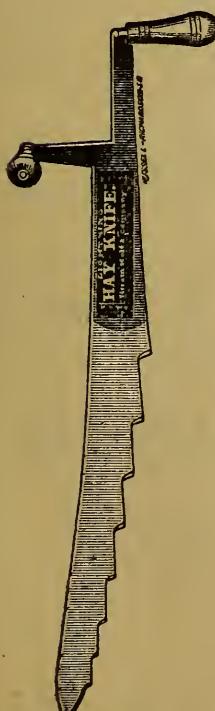
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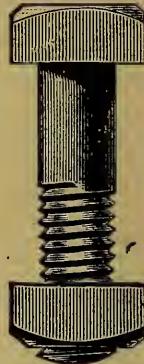
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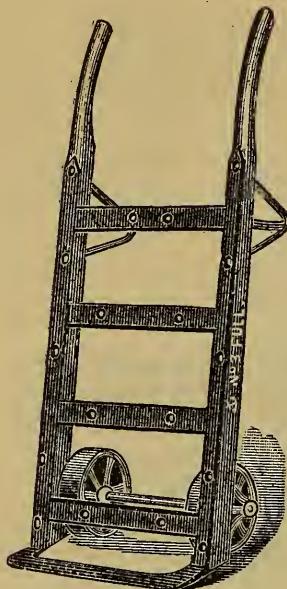
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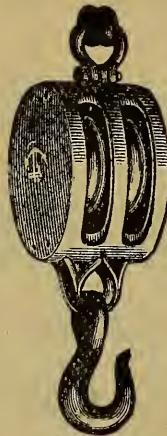
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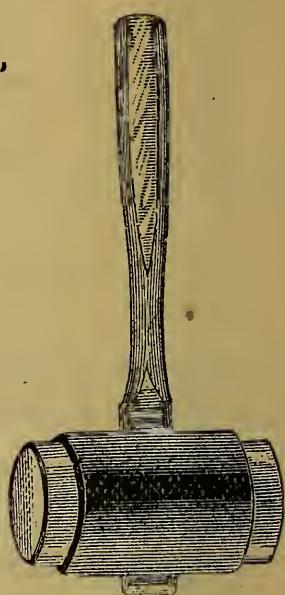
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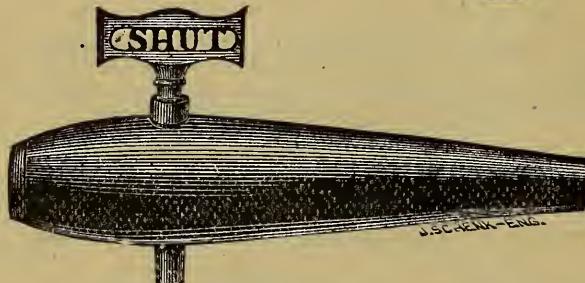
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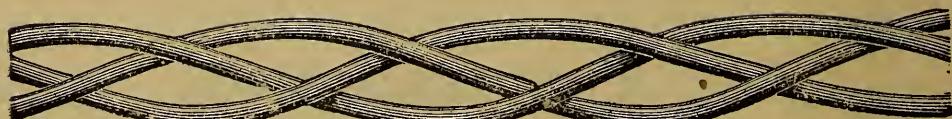
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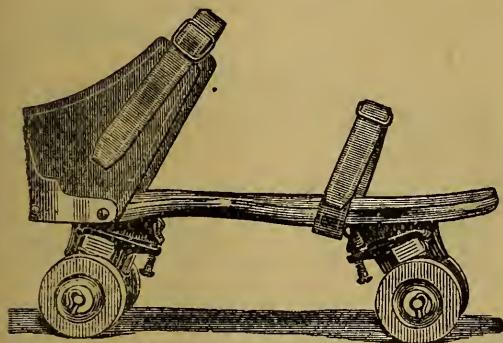


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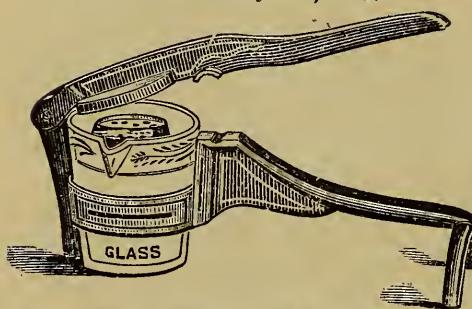
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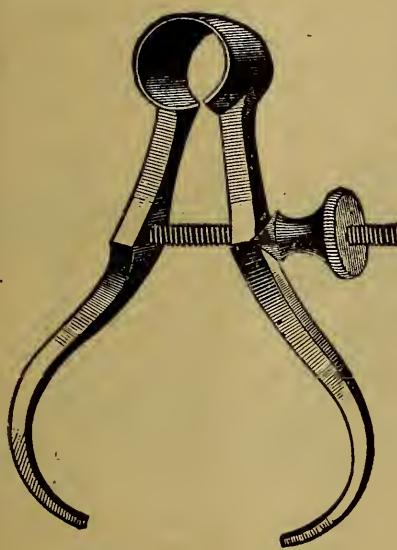
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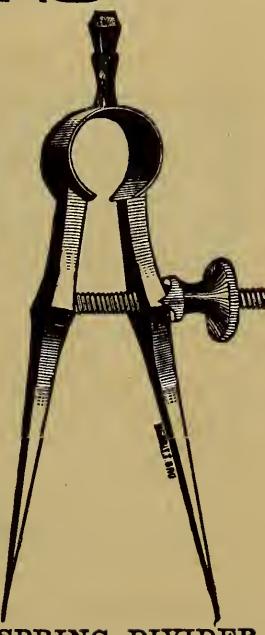
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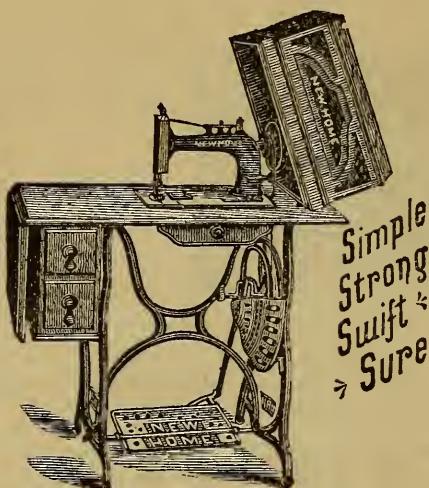
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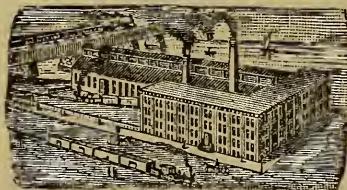
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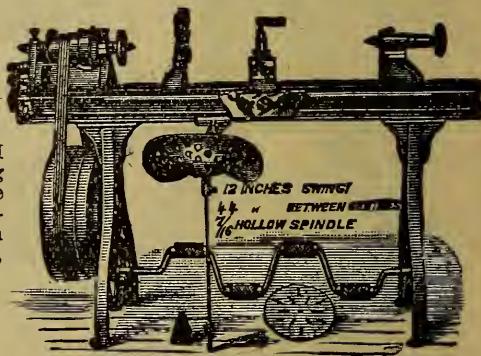
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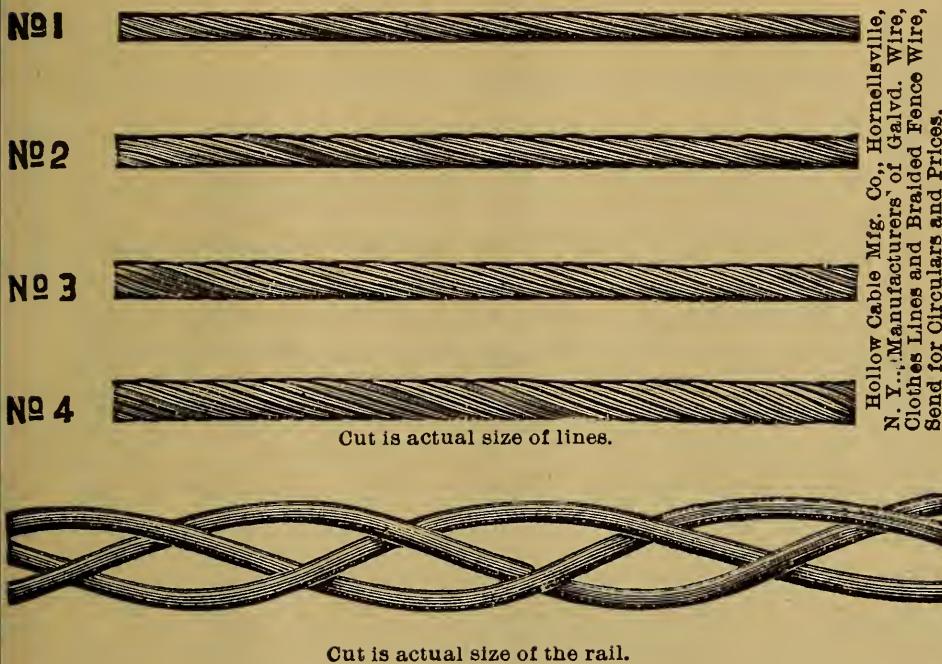
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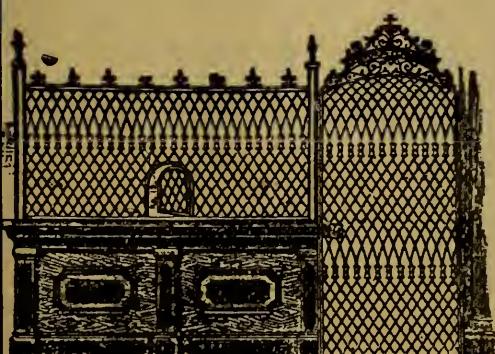
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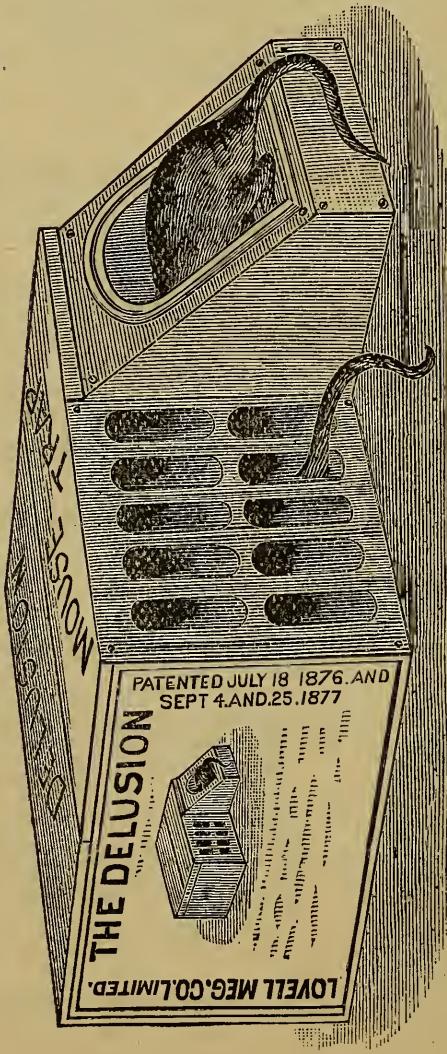
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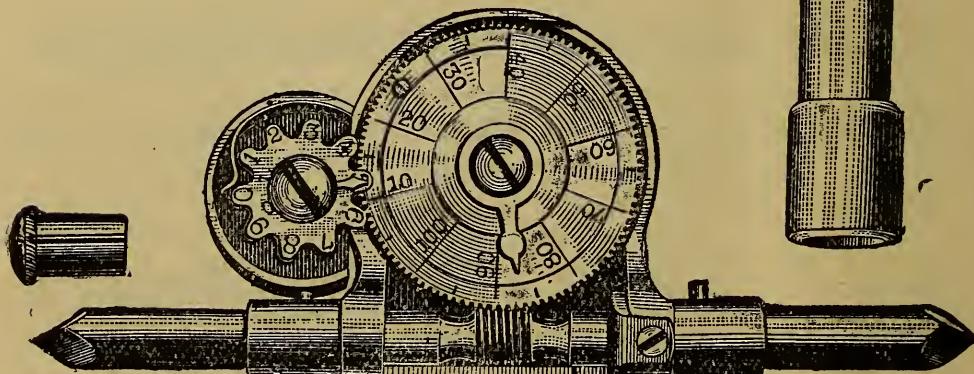
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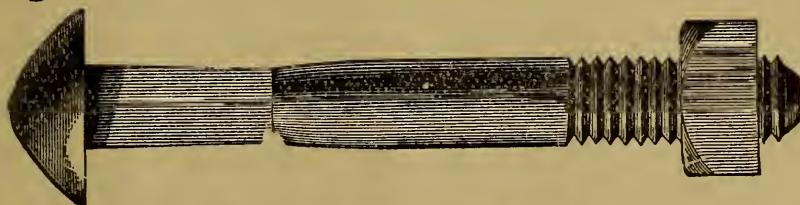
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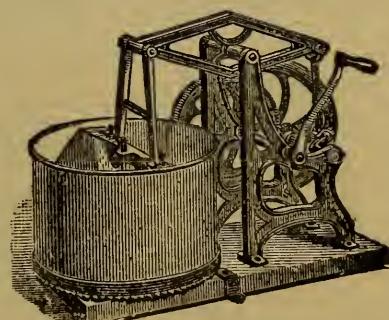
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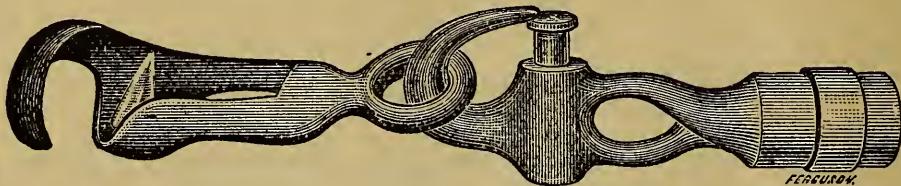
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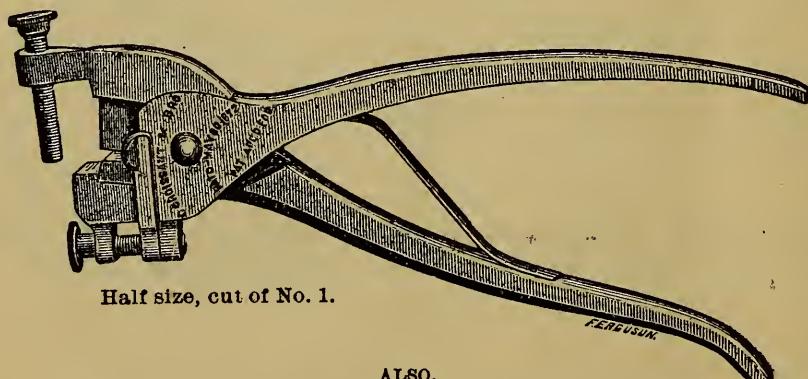
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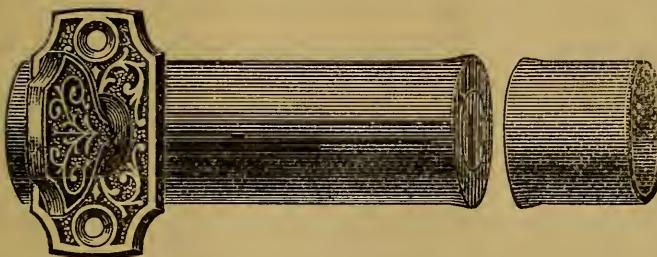
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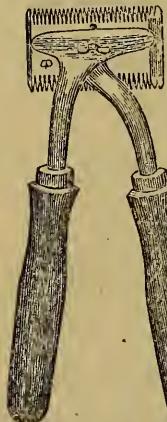
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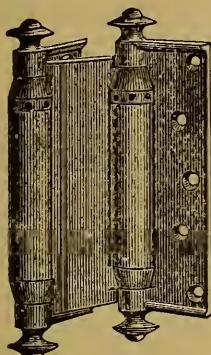
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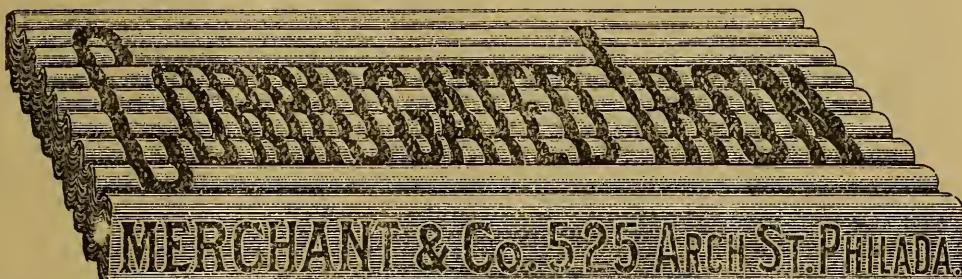
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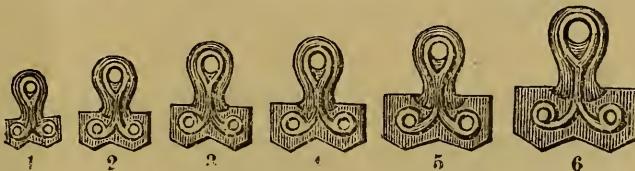
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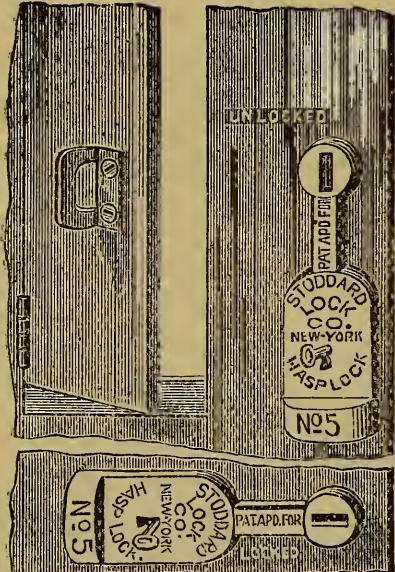
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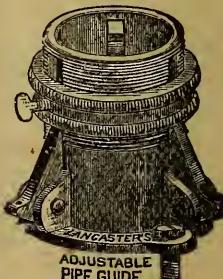
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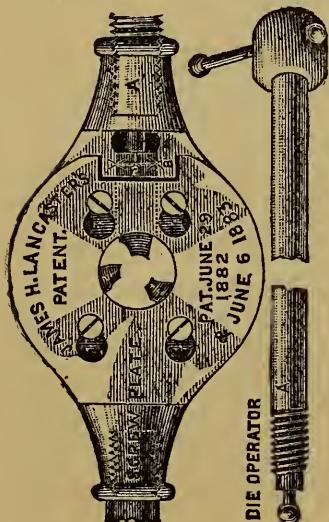
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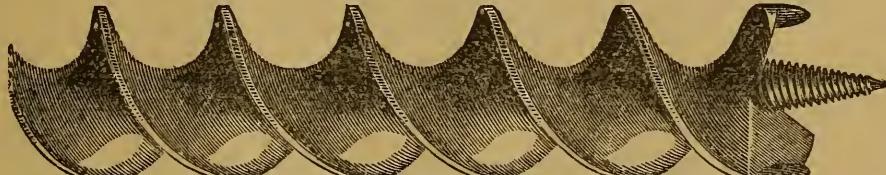


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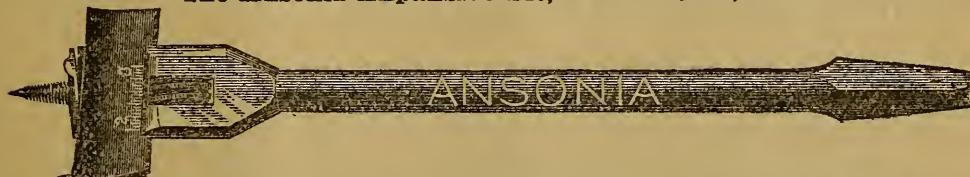
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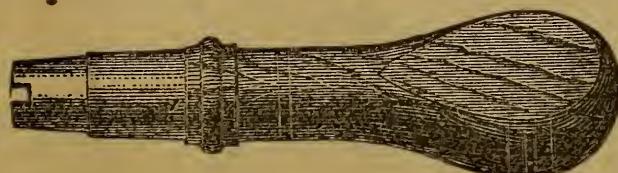
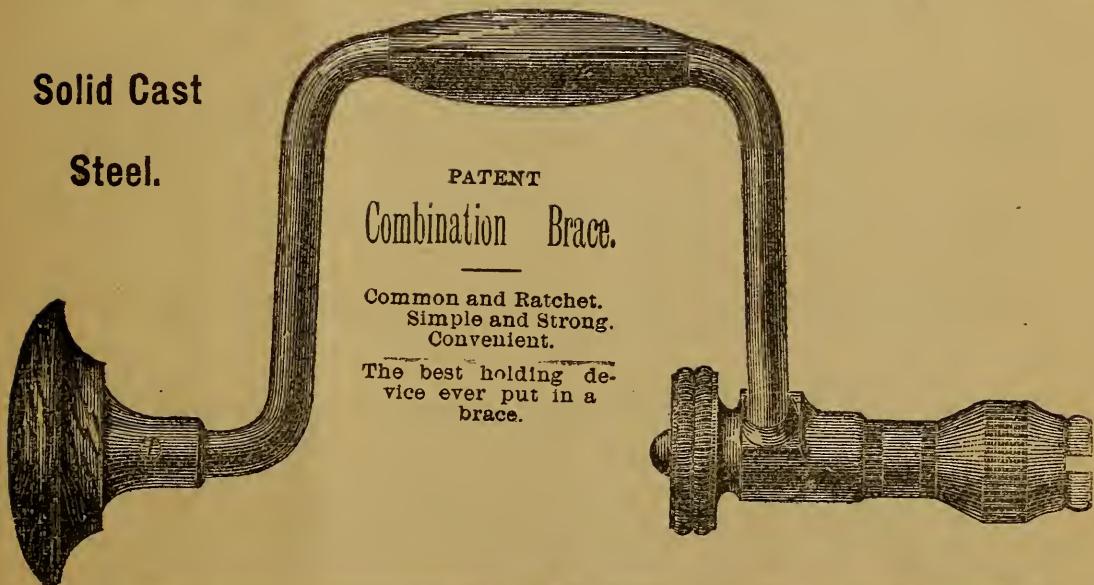
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